To: Schardt, James[schardt.james@epa.gov]
Cc: Wortman, Santina[Wortman.Santina@epa.gov]; Hinchey, Elizabeth[Hinchey.Elizabeth@epa.gov]; Adams, Jackie[Adams.Jacqueline@epa.gov]; Torchia,Carla [Ontario][Carla.Torchia@ec.gc.ca]
From: Kumar,Ashij [Ontario]
Sent: Fri 10/23/2015 2:00:39 PM
Subject: RE: PRP Annex 4 Chapter - new clean file
PRP A04 Chapter-Oct 22 draft ak clean.docx

Seems the "clean" version of the file I sent yesterday wasn't so clean. I've attached a new version.

Ash

From: Kumar,Ashij [Ontario]
Sent: October 22, 2015 3:00 PM
To: Schardt, James
Cc: Wortman, Santina; Hinchey, Elizabeth; Adams, Jackie; Torchia,Carla [Ontario]
Subject: PRP Annex 4 Chapter

Jamie - with John gone now who will be holding the pen on this A4 draft?

I've attached 3 files – the most recent version of the draft John assembled with everyone's input; my tracked edits to this draft; and a clean version since the tracked version is messy with all the text moved/formatted. I'm probably not the best person to be editing this but I took a shot. Also, my edited draft only has some of the CDN domestic actions completed and likely needs punchier language but I need to work on the draft CCI chapter which was due back to our writing team today.

I think we'll likely need a call to talk about moving this A4 draft along.

Ash

From: Wortman, Santina [mailto:Wortman.Santina@epa.gov]
Sent: October 5, 2015 6:35 PM
To: Haugland, John

Cc: Schardt, James; Hinchey, Elizabeth; Adams, Jackie; Kumar,Ashij [Ontario]; Torchia,Carla [Ontario]
Subject: RE: GLNPO input to PRP Annex 4 Chapter

Hi John, I believe I promised you a first draft today. Let me know if this is on the right track. To me this is the appropriate level of detail for the public.

I haven't vetted the language yet and some statements are incomplete for now (particularly when I'm projecting into 2016), but gives you an idea what we would say.

The primary action taken in support of these commitments was the establishment of revised binational phosphorus loading targets for Lake Erie. In the span of just three years, the US and Canada were able to work collaboratively and in consultation with stakeholders to conduct a comprehensive science-based assessment of the phosphorus reductions needed to meet Lake Ecosystem Objectives, and reach consensus on new phosphorus limits for the Lake. The Parties have agreed that significant reductions in phosphorus are needed to combat Western basin algal blooms and Central basin hypoxia. Specifically, the US and Canada have agreed to reduce phosphorus loading to the Western and Central basins by forty percent. A new target load of 6,000 metric tons annually was allocated [insert amount once final] U.S. and [insert amount once final] Canada. This load is expected to raise the dissolved oxygen levels in the bottom waters of the Central basin to 2 mg/L. The Parties also identified priority watersheds for phosphorus control to address nearshore blooms. Finally, because the modeling showed that spring loading of phosphorus from the Maumee River in Ohio is the determining factor in the production of cyanobacteria in the Western basin, specific seasonal targets were identified for the Maumee River. A forty percent reduction Maumee spring phosphorus loads is expected to lower cyanobacteria biomass in the Western basin to mild levels in 9 years out of 10.

The revised phosphorus targets, summarized below, were vetted with the public during the summer of 2015 and ratified by the U.S. and Canada in February 2016. These targets address all but one of the Lake Ecosystem Objectives identified in the Agreement. More work remains to be done to address the second Lake Ecosystem Objective, "Maintain the levels of algae below the level constituting a nuisance condition," which is of particular importance in the Eastern basin of Lake Erie, and in other parts of the Great Lakes. While models were used to explore the impact of phosphorus reduction on nuisance algae (Cladophora) growth in the Eastern basin, the confidence in the model predictions is not adequate to recommend a specific target at this time. Additional research is required to link phosphorus loadings to changes in algal production prior to recommending phosphorus reduction targets to address *Cladophora*.

Binational Phosphorus Load Reduction Targets		
Lake Ecosystem Objectives *Great Lakes Water Quality Agreement* *Annex 4, Section B*	Western Basin of Lake Erie	Central Basin of Lake Erie
Minimize the extent of hypoxic zones in the Waters of the Great Lakes associated with excessive phosphorus loading, with particular emphasis on Lake Erie	40 percent reduction in total phosphorus entering the Western Basin and Central Basin of Lake Erie – from the United States and from Canada – to achieve 6000 MT Central Basin load	
Maintain algal species consistent with healthy aquatic ecosystems in the nearshore Waters of the Great Lakes	40 percent reduction in spring total and soluble reactive phosphorus loads from the following watersheds where localized algae is a problem: Thames River - Canada Maumee River - US River Raisin - US Portage River - US Toussaint Creek - US Leamington Tributaries – Canada	Sandusky River - US Huron River, OH – US
Maintain cyanobacteria biomass at levels that do not produce concentrations of toxins that pose a threat to human or ecosystem health in the Waters of the Great Lakes	40 percent reduction in spring total and soluble reactive phosphorus loads from the Maumee River (U.S.)	N/A

While in general there was strong public support for these targets, stakeholders expressed valid concerns with the lack of a phosphorus target to address nuisance Cladophora in the Eastern

basin of Lake Erie. The US and Canada are committed to continue supporting research, monitoring and modeling efforts that will improve our scientific understanding of Cladophora growth and propose further phosphorus reductions to ameliorate nuisance algae impacts in the Eastern basin, if warranted. Recent actions toward this goal include:

- The Nutrients Annex Subcommittee worked with the Science Annex Subcommittee to convene a workshop on the state of the science of Cladophora in early 2016. The results of this workshop …

- Environment Canada research expected to wrap up march 2016

- The US and Canada formed a new workgroup with representatives from EPA, EC, NYSDEC, OMOEE, OMNRF, and USGS to initiate nutrient target development in Lake Ontario. The group will start by examining current trends and data gaps particularly with respect to nearshore Cladophora growth as a response to nutrient levels in Lake Ontario.

Binational strategy {expected draft in Feb 2016}

The US and Canada prepared a binational strategy for implementation of the Lake Erie phosphorus reductions moving forward. The strategy identifies binational priorities for research and monitoring, with a focus on coordinating our efforts to track progress through an active adaptive management process.

Finally, the US and Canada have begun work to develop domestic action plans and anticipate releasing draft action plans by the end of 2016. These plans will outline in more detail the specific implementation strategies needed to achieve the 40% reductions.

From: Haugland, John
Sent: Wednesday, September 23, 2015 1:20 PM
To: Hinchey, Elizabeth; Adams, Jackie
Cc: Wortman, Santina; Ashij Kumar; Torchia,Carla [Ontario]; Schardt, James; Jaffess, Sharon; Horvatin, Paul
Subject: GLNPO input to PRP Annex 4 Chapter

Hi Jackie and Beth:

We had our next call to discuss the progress report chapter on Annex 4. Santina agreed to pull together descriptions of binational actions taken. Ash and Carla will cover the public consultation action and Canadian actions taken.

We're asking you if you can help with a couple things:

First, can you provide a brief SOLEC-indicator-based highlight of the environmental state of the issue? Think maybe 600-800 characters, plus charts or graphs. But don't worry too much about length at this point.

And second, can you provide a short description of U.S. domestic actions taken, i.e., significant domestic program efforts to address nutrients (e.g., fed, state), per existing GLRI information, the Lake Erie LAMP report, or other existing documentation? Maybe 600-800 characters for a rough target.

Let me know if you can do this, and if so, if you can provide rough cuts by Monday, Oct. 6.

Thanks for your consideration!

John

John Haugland

Environmental Protection Specialist
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